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COAL

BRIEFS

GIANT COAL CONVEYER--Imagine a conveyer running, for example, from Pulkovo Airport to Nevskiy Prospekt. A gigantic conveyer this long or even a bit longer, designed by Leningrad specialists at the Giproshakht Institute, is under construction in the Kansk-Achinsk Fuel and Energy Complex. This unique conveyer is 15 kilometers in length and almost 2 meters wide. Its purpose is to transport a huge flow of coal from the Berezovskiy strip mine to one of the largest of the KATEK electric power stations -- Berezovskaya GRES-1. The conveyer will consist of two lines: a regular line and a backup line. Each consists of the supporting structure, a strong rubber belt, and tens of thousands of rollers made of high-strength steel. Each day up to 100,000 tons of coal will be moved from the mine to the power station. [By V. Aleshin] [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 29 Jan 83 p 4] 3024

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NUCLEAR POWER

IMPROVING DELIVERIES TO AES CONSTRUCTION SITES

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 3, Mar 83
pp 51-53

[Article by A. Gusev, section chief, USSR Gosnab Administration for Construction Supply and L. Fldzhyan, senior engineer: "Providing Reliable Deliveries to Projects under Construction"]

[Text] The State Plan for the Economic and Social Development of the USSR for 1983 has provided for the further development of nuclear power engineering. Construction and installation work is being carried out on the new power units of the Kalininskaya, Chernobyl'skaya, Kurskaya, and Zaporozhskaya AES's *[Atomic Electric Power Stations]*. Preparatory operations will be begun at the Minskaya ATETS *[Atomic Heat and Electric Power Station]*. In comparison with last year capital investments in the production of construction and installation work have been significantly increased. The volumes of deliveries of metal, cement, lumber, and other materials have also grown.

All of this presents increased demands on the supply-and-marketing organizations. The problems which they must solve have been set forth in a joint order of USSR Gosnab and the USSR Ministry of Power and Electrification. Above all, it is necessary to bring about a situation whereby the delivery enterprises strictly observe the deadlines for delivering and unloading items in the products list provided for by the ~~agreements~~ ^{agreements}. In contrast to last year, the organs of USSR Gosnab this year must exercise monitoring controls over the deliveries and certain sub-contracting organizations, in particular, those engaged in erecting housing for the builders of AES's and for those who operate them.

Last year's experience has demonstrated that certain main territorial administrations and Union-republic Gosnabs did not manifest the necessary concern for providing the construction of AES's with material-technical resources. This is the only explanation which can be offered for the fact that for 12 months the groups engaged in building AES's were short in their receipts of steel pipes by 350 tons and in usable lumber by approximately 20,000 cubic

meters. From quarter to quarter many supply-enterprises remained behind in their deliveries to the builders. And although they eventually made this up, the late delivery of materials caused a breakdown in the schedules of construction and installation work on the stations, as well as idle times of brigades and entire sections.

At conferences in the USSR Gossnab and on the pages of this journal last year criticisms were leveled on several occasions at the Southern Urals Main Territorial Administration. However, its leading officials could not seem to bring about a situation whereby the enterprises of this economic region would observe their contractual obligations. As a result, the Chelyabinsk Metallurgical Plant, for example, during the fourth quarter out of 2,275 tons of rolled metal only about 300 tons were delivered. And less than one-third of the prescribed amount was shipped out by the Dneprovsk Metallurgical Plant imeni Dzerzhinskiy. However, the Ukrainian Gossnab failed to take the necessary measures with regard to the violator of the contractual discipline.

During the year just past because of lateness in the deliveries of products distributed by Soyuzglavkhim, there were delays in the heat-insulating and finishing operations on AES projects. The builders received epoxy resins, white mineral pigments, paints and enamels, polyethylene tubes, and other materials with a large number of interruptions. To blame in all this are not only those enterprises delivering these materials, but also Soyuzglavkhim and the territorial organs of USSR Gossnab, which failed to take decisive measures to eliminate the violations of the deadlines for deliveries.

To this day there are quite frequent instances of builders receiving something else than what they need, and they are compelled to have recourse to inefficient substitutes. Let's say that the metallurgical plants ship out St-3 type of steel instead of the required 35GS type of steel. In certain structural components this steel can be used, but, in order not to decrease the planned strength of the product, much more of it is expended than would be the case with 35GS type of steel. The expenditure increases by 43 percent, that is, each ton being replaced requires an additional 430 kilograms of reinforcement steel. Furthermore, corresponding outlays of labor are also required.

If with all the shortcomings in the supply of items for the construction of AES's which took place last year the builders still managed to carry out their assigned tasks, then this is primarily the result, speaking frankly, of their intensified labor. It should also be emphasized that in the culminating phase of the year such organizations as the Kamgesenergostroy Production Association, the Saratovgesstroy, and others were drawn into the construction of AES's in addition to sub-divisions of the All-Union Soyuzatomenergostroy Association.

In order to avert the mistakes which were allowed during the second year of the five-year plan, the soyuzglavsnabsbyty, soyuzglavkomplekty, and the gossnabs of the Union republics, along with the main territorial

administrations must set up a precise rhythm for deliveries of material-technical resources. What is necessary for this? The answer to this question was provided by the November (1982) Plenum of the CPSU CC. In his speech at the Plenum the general secretary of the CPSU CC, Comrade Yu. V. Andropov, stated the following: "It is necessary to mobilize all existing means at our disposal, to unleash a broad-based propaganda and explanation of the tasks of the plan for 1983. They must be given specific form as applied to the tasks of each enterprise and of each working group."

The supply and marketing organizations must, in the first place, in their activities with respect to providing the construction of AES's with materials, products, and equipment, be guided by the joint order of USSR Gosnab and the USSR Ministry of Power and Electrification. All the measures outlined in this order must be carried out consistently and strictly within the established time period. It is important to set up close contacts with the groups engaged in building AES's. Along with this, we must make the amounts and deadlines of the deliveries more precise, to impress this on every person carrying this out, and organize systematic monitoring controls over the progress of the execution. The territorial organs of USSR Gosnab where the enterprises delivering the products to the AES's are located must, in conjunction with them, work out organizational-technical measures which will ensure the on-schedule shipment of these products to the builders of AES's.

Moreover, we must not allow deviations from the requirements of the operative normative documents. Such instances, unfortunately, did take place last year. Let's say that there exists a rule according to which metallurgical enterprises do not have the right to replace certain types of rolled metal with others without the permission of the Gosnabs of the Union republics and the main territorial administrations. However, such substitutions have taken place without their knowledge and sometimes even with the tacit agreement of the organs of USSR Gosnab in the localities. For example, the Krivorozhstal' Metallurgical Plant in July--August was short in their delivery of rolled metal by more than 2,200 tons, and they shipped to the Zaporozhskaya and Yuzhno-Ukrainskaya AES's much more steel plate than was required. As a result the builders were compelled to remain idle for some time.

I would particularly like to talk about the relations between the organs of the USSR Gosnab and the USSR Ministry of Power and Electrification. The fact of the matter is that to this very day the ministry itself has not worked out a system of ensuring the deliveries of material resources to the construction sites of AES's. The Main Supply Administration of the USSR Ministry of Power and Electrification considers this to be a matter for the All-Union Soyuzatomenergostroy Construction and Installation Association. The latter transfers a third of the materials allocated to the enterprises manufacturing pipelines, reinforced-concrete and metal structural elements, and other items for the builders of AES's. These materials are arranged and delivered not to the AES's under construction but directly to the manufacturing plants. Thus, the priority of deliveries which the AES's have is

lost. Hence also the delays, leading to the disruption in fulfilling these or other tasks.

As we have already stated, this year we must put into operation new power units at many AES's. Consequently, large problems remain to be solved by the outfitting organizations. An important role herein must be played by Soyuzglav-komplekt. It is necessary to achieve a situation whereby all the equipment for the start-up facilities arrive, as authorized, within the normative deadlines for deliveries. This can be achieved if the Soyuzkomplekty will operate in conjunction with the territorial outfitting organizations. It is precisely they who can exert a direct influence on the enterprises manufacturing the equipment.

It is thought that a great deal of aid in the matter of ensuring the delivery of material resources to the construction sites of AES's should be rendered by the party, trade-union, and Komsomol organizations of USSR Gosnab's territorial organs. In our opinion, in summing up the results of the socialist competition we must take into account the fulfillment of the orders of the AES builders. We need to explain to every worker that the precise supplying of AES projects with everything necessary constitutes our contribution to the further development of electric power engineering and, consequently, to the intensification of production as well.

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PIPELINE CONSTRUCTION

STATUS REPORT ON URENGOY-UZHGOROD GAS PIPELINE

Kiev PRAVDA UKRAINY in Russian 2 Feb 83 p 1

/Article by Ya. Zhukovskiy: "From Urengoy to the Carpathian Mountains: Pulse of the Construction Project" /

/Text/ The newspaper PRAVDA UKRAINY contains weekly information on the progress of work on the Ukrainian section of the Urengoy-Uzhgorod gas pipeline. Our readers are asking for this information in the large newspaper. The editors intend to publish a review entitled "Pulse of the Construction Project" every month. The review will tell about the status of work on the gas mainline in all ten oblasts of the republic where construction work is underway.

The socialist pledges for 1983 of the builders of the Urengoy-Pomyary-Uzhgorod gas pipeline call for a significant reduction in the amount of time required for the work. From the very first month, a fast pace has been maintained. In January on the Ukrainian section of the pipeline more welded and insulated pipe has been laid in the trench and backfilled than was completed in December - 113.6 kilometers. Altogether, according to recent data, almost 500 kilometers of the mainline has been prepared for start-up testing and some 722 kilometers have been welded into a strand - this represents more than one half of the entire stretch within the borders of the Ukrainian SSR gas supply system (from the 3,068 to the 4,460 kilometer mark).

The greatest amount of work has been completed in Kiev Oblast. The comprehensive industrial flow-line organization, which was formed out of several welding and installation administrations of the Ukrtruboprovodstroy /Ukrainian pipeline construction/ Trust is advancing confidently. The builders, who have been based in Mironovka since last summer, have moved far to the west, leaving their Stavishchenskaya base and Tetiyev far behind; they are now working near the final point - near the border with Vinnitsa Oblast. In January this collective, which is headed by the chief of the industrial flow-line brigade V.F. Radchenko, handed over a

18.5 kilometer stretch of the pipeline - more than anybody else out of the 16 industrial flow-line organizations now at work within our republic and on the approaches to the Ukraine. The entire Kiev section of 115 kilometers has been almost completely "closed": in January the final 500 meters of pipe were delivered to the pipeline path; they have already been welded into a strand. It only remains to lay another five kilometers of flow-line welding, to insulate nine kilometers and lay some 12.5 kilometers into the trench.

In amount of work completed on the path, Ivano-Frankovsk Oblast is in second place. Here more than 77 kilometers of the mainline have already been laid; and 11.3 kilometers were handed over in January. In this regard one must keep in mind that the builders are working in the most difficult conditions - in mountains. Often a long section of pipe (22 meters) cannot pass through the mountainous roads and the installation people are forced to extend the pipeline a pipe at a time. This doubles the amount of installation and welding work; and what is more frequently this is done on very steep slopes. All the same the foremen from the Caucasian Administration for the construction of pipelines who are working in the mountains along with local workers who have in their time laid major mainlines in the Carpathian Mountains, and construction workers from the German Democratic Republic have been able to complete 15.2 kilometers of gas pipeline in one month. Out of 166 kilometers which are to be laid in Ivano-Frankovsk Oblast, some 102.5 kilometers have been welded into a strand. The subelements of the Caucasian Administration in cooperation with collectives from other administrations are in charge of the entire western terminus of the pipeline path - right up to where it crosses the border to the south of Uzhgorod.

From the start of this year the pipeline builders have activated work in Lvov Oblast as well (the third industrial flow-line organization of the Caucasian Administration). This is a small section, only 41 kilometers; it has not been handed over yet. But the first kilometers of the strand have already been welded. And in January one kilometer of the mainline was insulated.

In the Ukraine there are several subelements at work, which came here from other Soviet cities. The Voronezh builders have laid some 30 kilometers in Sumy Oblast; more than 17 of this amount was completed in January. The Leningrad workers, who started the pipeline in Poltava Oblast, last month went all out to hand over the mainline: 17.6 kilometers were welded into a strand and 18.1 kilometers were laid (counting the surplus). Altogether in Poltava Oblast by the end of January some 85 kilometers of the strand and 27 kilometers of the pipes were laid in the trench. The length of the stretch here is 155 kilometers.

The Bryansk builders will have to work faster. In Cherkassy Oblast, where they are working, they have already completed the underwater crossing of the Dnepr River. But the linear work in the flood lands of the river and on land is clearly lagging behind: in January nothing was completed and handed over here. They managed only to insulate 1.5 kilometers of pipe and to weld four kilometers.

From the start of the year they have been working intensively to construct an overhead crossing over the deep-water portion of the Dnestr River in Ternopol Oblast. For half of the distance the river is already spanned by an earthen dam and eight drilled supports out of 24 have been installed. The 1,420 mm pipe will cross over the river for a distance of 342 meters and for 708 meters above the river's flood lands. Bridge builders from the German Democratic Republic are at work.

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PIPELINE CONSTRUCTION

JANUARY PROGRESS REPORT ON EXPORT GAS PIPELINE

Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 83 p 3

/Article by A. Panin: "January on the Pipeline Route" /

/Text/ We recall that the construction of the Urengoy-Pomary-Uzhgorod gas pipeline got underway in June of last year. The shock labor of the socialist competition leaders - the collectives of the Soyuzgazspetsstroy /All-Union Special Gas Pipeline Construction Trust/, Mosgazprovodstroy /Moscow Gas Pipeline Construction Trust/, Kuybyshevtruboprovodstroy /Kuybyshev Pipeline Construction Trust/, Bryansktruboprovodstroy /Bryansk Pipeline Construction Trust/ and many other subelements of the USSR Ministry for the Construction of Enterprises for the Petroleum and Gas Industries - has made it possible to fulfill the annual work schedule on the route of the pipeline and to establish a solid basis for meeting their 1983 pledges by the 7th of November 1982.

Within six months the flow-line brigade headed by B. Kushka has handed over 135 kilometers of finished pipeline. L. Mikhelson's group has handed over 126 kilometers, V. Belyayev's group has completed 199 kilometers and A. Buyankin's group has handed over some 98 kilometers of finished pipeline. This represents a 50 percent overfulfillment of the established assignments. The initiator of the socialist competition on the gas pipeline - the collective of Glavtruboprovodstroy /Main Administration for the Construction of Pipelines/- has completed the construction of 780 kilometers from the Volga to Elets ahead of schedule.

Complicated weather conditions in the fall and at the start of winter and transportation difficulties have not made it possible for some industrial flow line operations to meet their assignments. All the same within six months of last year some 2,300 kilometers were welded and another 1,850 kilometers were insulated and laid in the trench.

At the beginning of February on the whole for the pipeline there remained some 1,910 kilometers of the line to be welded into a strand and some 2,230 kilometers of pipe to be insulated and laid.

The USSR Ministry for the Construction of Petroleum and Gas Industry Enterprises and the USSR Ministry of the Gas Industry have developed and coordinated schedules for the ahead-of-schedule completion of large sections of the mainline so that these new sections can begin operating at the same time as the sections that were built previously. The sections will be completed at different times. Their by-stage handover represents one of the key organizational measures ensuring the timely completion of the adjustment work and the ahead-of-schedule handover of the entire mainline.

In March it is planned to put a 356 kilometer stretch of the line into operation, in April - 487, in May - 1,350, in June 875 and in the third quarter - 1,482 kilometers. In accordance with the sequence for completing the construction of sections it is planned to start up the compressor stations. All of this will provide the national economy with several billions of cubic meters of gas in excess of the plan.

Considering the great importance of the ahead-of-schedule completion of the gas pipeline, the collectives of the majority of the comprehensive technological flow-line outfits and the construction subelements that are building the compressor stations have taken on increased socialist pledges to ensure the ahead-of-schedule, by-stage completion of the pipeline and to work diligently at the construction sites. In January the pace of work exceeded 20 kilometers per 24-hour period.

To successfully fulfill the program for the construction and completion of the gas pipeline and compressor stations there must be well coordinated work for the builders and for the dozens of enterprises and organizations that are working on this gigantic project.

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PIPELINE CONSTRUCTION

FEBRUARY PROGRESS REPORT ON EXPORT GAS PIPELINE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 26 Feb 83 p 1

/Article by Ya. Kolyasa, correspondent from the L'VOVSKAYA PRAVDA newspaper, Lvov: "A Hot February: Urengoy-Uzhgorod, People and the Pipeline" /

/Text/ No matter how capricious this winter is, bringing first rain then frost, at the All-union alpine skiing base in Slavskiy one senses that it's February now. The mountains are covered in a coat of snow; only the roads below appear black - the cars have thrown the snow aside. There are a lot of cars here, especially on weekends and holidays, as the ski season is in full force. Often one can see how a driver of a heavy pipe carrier glances with envy at the boys and girls with ski poles in their hands - what could be more pleasant than such relaxation?

But the gas pipeline builders have no time for relaxation. At the end of the summer the final seam must be welded, but there is still a lot of work. As of 1 February on the Lvov section 6.1 kilometers of pipe have been laid and 3.4 kilometers of trench has been prepared. The length of the entire section is 27 kilometers. But one subelement participating in the construction of the line has already completely finished its work. These are the railroad workers, which includes the collective of the Tukhlya railroad station. All of the pipe has arrived here. A large portion of the pipe was been delivered to the mountains and the remaining pipe is stacked at the station where each day the pipe carriers come.

The drivers try to work fast before the arrival of the spring thaw conditions, delivering the pipes to the "pockets" that have been established in various places. Every morning the welders are more and more concerned that the frost has set in. It is very difficult for them to work in the severe cold: you cannot move much when you are handling a weld - hands become numb and feet freeze.

We went up to the pipeline in a watch vehicle along a familiar road. The builders had made noticeable progress and the welding stand had already been left behind. Kh. Gireyev's brigade was at work on the stand. This brigade welds pipes into two-section lengths [doubles]. The work is performed by hand because they were unable to set it up properly; in addition it had been decided to use a different tactic to lay the pipeline. Four installation brigades were broken down into twos. One collective proceeds a little in front and welds the sections, leaving them on the pipeline path. A second collective comes along from behind and welds the sections into a strand of the pipeline. This method proved itself during the laying of the Soyuz gas pipeline and the Bratstvo gas pipeline through the Carpathian Mountains.

N. Gritsay's brigade is working nearby. The powerful pipelayers hold the pipes and the bright sparks of the electrowelding slowly move along the joint. Ye. Negoda, one of the collective members, tears himself away from his work for a minute to tell us about how things are going for the brigade.

He says, "We have seven welders. Now on the average we are doing one joint per man. This is a good result since the norm is 0.8. But this is a relatively level section. Soon we will encounter an incline and the work will become a little harder. In such conditions it is not easy to attain a fast pace and high quality of welding."

The senior work superintendent, F. Sadriyev, continues: "The gas pipeline will operate under high pressure. And the quality of the welding and insulating must be beyond reproach. The specialists from the laboratory check each joint. Based on their evaluation, in several places the work has to be done over. In addition, the plant insulation during the prolonged transporting of the pipes becomes damaged in spots. Here is such a spot." F. Sadriyev points to a hole on the pipe that is about the size of a five-copeck coin. "This has to be insulated separately otherwise in a couple of years there could be an accident. And if there is a scratch on the metal, it has to be completely cut out so that the pipe does not have to be dug up later. For this reason, without forgetting about the speed of laying the pipeline, we are giving a great deal of attention to the quality of the work. After all in the near future we will start to lower the pipe into the trench and backfilling it."

Not far from the construction workers' village a mountain of cane mat is being built. This is the material for the "bed" beneath the pipe. The mats are laid on the bottom of the trench; they cover the pipes from above so that the frozen earth and rocks cannot damage the insulation. Very soon the gas pipeline will be able to "breath" and move from side to side, if one can express it in this way. The cane will serve as a type of shock absorber.

The builders are getting ready to lay two very difficult sections. One of them is in a swampy area. Even though this is a mild winter it is still better to work here now than in the spring. For this reason the collective is hurrying to complete the section as quickly as possible.

The other very difficult section is a mountain with the gloomy name of Mogila /grave/. On a relief map of the pipeline the mountain looks like a narrow, sharp tooth.

G. Grigoryan, who is responsible for the work of the collective of the industrial flow-line organization No 3, explains: "the height of this mountain is less than that of Magura, but the steepness of the slopes is great. When the snow begins melting it will become extremely difficult to surmount them. We will try to do this in February while it is cold. We will bring in all four installation brigades, equipment and start the storming process from two sides. We have added to our equipment and we believe that we can do this job quickly."

So it turns out that the usually cold and snowy month of February is almost the hottest month in the year for the pipeline builders. Yet another test awaits the people and equipment. But the extensive experience in the mountains and the good labor attitude of the collective means that the task will be fulfilled.

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PIPELINE CONSTRUCTION

CONSTRUCTION REPORT FROM CHERKASSY-KIEV-KHMELNITSKIY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Mar 83 p 1

[Article, published under the heading "Urengoy-Uzhgorod: People and Pipeline," by SOTSIALISTICHESKAYA INDUSTRIYA correspondent Zh. Tkachenko, Cherkassy-Kiev-Khmelnitskiy: "Bringing Completion Near"]

[Text] Blizzards and heavy March snows have not slowed the pace of construction on the Urengoy-Pomary-Uzhgorod natural gas pipeline. Yesterday the 3500th kilometer of this trunk line was laid ahead of schedule. This was reported by the main dispatcher administration of the Ministry of Construction of Petroleum and Gas Industry Enterprises.

A bit less than 1000 kilometers remain for the people building the Urengoy-Pomary-Uzhgorod natural gas pipeline. Socialist competition for ahead-of-schedule completion of pipeline construction is in full swing along the line. (TASS)

A biting wind was blowing from the northeast. It was cold. "Maybe it's not like in Tyumen, but even worse," the pipeline construction workers jokingly comment, "because it is so damp here and the cold goes right through you." But whatever the weather, it is not impeding the job.

"Each and every kilometer of pipeline ahead of schedule!". This is the slogan, the law governing life on the thousand-kilometer stretch of pipeline crossing the territory of this republic.

The Cherkassy section stretches 116 kilometers. Having successfully crossed the Dnieper, the divers are making ready for additional crossings. The inverted siphon which will run across the Ros will be done well and ahead of schedule. A compressor station is under construction by Zolotonosha, being erected at an accelerated pace by the workforce of a mobile mechanized column of the Cherkasspromstroy Combine.

Six months -- the workforce of the 16th Construction-Installation Administration of the Ukrtruboprovodstroy Trust is planning to complete the 115 kilometer Kiev section of the pipeline this much ahead of schedule. They have learned to work not only fast but also economically, with a thrifty attitude toward the resources which the government is giving the pipeline project. The slogan

"Fast and at Least Cost" hangs in the work gang car for a reason. All work on the pipeline is permeated with an understanding of the importance of the assigned target: the construction workers will achieve savings of 12 tons of rolled metal, 20 cubic meters of lumber, 15 tons of fuel, and 17,000 kilowatt hours of electricity. They are working hard to reduce the cost of construction and installation by almost 270,000 rubles.

A shock-work pace has been secured by combined job organization, applied for the first time on a large scale. Sixteen spreads are operating in this republic. Each contains specialized subdivisions. It is easier to coordinate the manpower and resources concentrated in a single production unit, and it is easier to achieve their interaction, shunting around available time and resources. Road and rail line crossings are prepared in advance, for the pipeline is passing through densely populated areas saturated with roads, utility lines, etc. In the Kiev section, for example, it was necessary to make 23 such crossings. If we were to operate in the old way, work interruptions en route would be inevitable, but here they managed to avoid a single delay.

Arc welder foreman V. Korol' raised his headshield, took a break while waiting for administration foreman M. Kulikovskiy to reach him. Welders V. Fedorov and V. Tapinskiy also took a one-minute break. They wanted to find out how things were progressing on the right-of-way, how many meters of ditch had been dug, and whether the welders were managing to keep up. More than a thousand doubles had already been welded along the stretch which had recently been under construction here in Chemerovetskiy Rayon. But the men were concerned, were they keeping up? The dope gang was already working at full swing here, on the first, largest section in Khmelnitskiy Oblast, between the Zbruch and Smotrich rivers. It was noticed that they had fallen behind their neighbors, in Dunayevtsy. This drew the attention of the members of the rayon party headquarters of the shock-work construction project. It was necessary to assist the pipeline construction workers with local resources and also to improve their living conditions. Now dormitory railcars have been provided, plus an 80-seat meal facility, and personal services are being made available.

On all the sections people are intimately involved in the concerns, interests, rhythm and movement of the pipeline. More than 250 workforces of construction workers, installation crews, specialized transport organizations, industrial enterprises, and design institutes are engaged in socialist competition according to the "work relay" principle for speeding up construction of Urengoy-Pomary-Uzhgorod natural gas pipeline facilities. Socialist pledges for the current year were discussed and adopted at worker meetings along the entire line. Those people who are guaranteeing engineer support of the line are actively participating in competition. For example, the staffs of the All-Union Scientific Research and Design Institute for Gas Transport and the Soyuzgazproyekt Institute resolved to complete in March, two and a half months ahead of schedule, design documentation for installing remote control on the gas pipeline proper and to ensure effective monitoring of quality of construction.

Of the 1146 kilometers of gas pipeline crossing the territory of this republic, more than 750 kilometers have been welded, and more than 500 kilometers of pipeline have been lowered in and readied for testing. This entire section will be ready to move gas in December of this year.

PIPELINE CONSTRUCTION

CONSTRUCTION REPORT FROM NOVYY URENGOY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Mar 83 p 1

[Article, published under the heading "Urengoy-Uzhgorod: People and Pipeline," by V. Kotov, Novyy Urengoy: "Columns Pick up the Pace"]

[Text] From our vantage point on board the helicopter we could easily pick out, even under a snow cover, the outlines of ice-imprisoned lakes, marshes, creeks, and the sinuous slopes of ravines. Nature had carefully concealed the natural gas resources of the Urengoy under sparsely-forested swampy terrain, the task of advancing across which was assigned to the pipeline construction workers of an experimental specialized administration (ESU-5) of the Tambov Soyuzgazspetsstroy Trust, who had come to assist the Tyumen construction workers building the Urengoy-Uzhgorod transcontinental natural gas pipeline.

Relocation to the northern part of the pipeline initially was not in the administration's plans. But the situation which had developed regarding construction of gathering lines, without which, as we know, gas cannot be fed into a trunk line, had forced Glavsbtruboprovodstroy to redeploy one of its trusts to this location. Sixty kilometers of export trunk pipeline were not being worked on. Now the workforce of the ESU-5 spread, headed by B. Kushka, had been brought by air to the starting "point" -- so-called zero.

Tikhaya Station, to which supplies and equipment were hauled, is located 200 kilometers from the jobsite. Stepping out of the helicopter onto the snow-covered tundra, Boris Andreyevich inspected the site, visited the nearby settlement housing the construction workers on the Urengoy compressor station, and made his decision: we shall set up here.

They set to work immediately, as if joining combat. The heavy equipment operators from Construction Administration No 8 prepared the right-of-way, the ditching machine operators dug the ditch, and soon expert welders A. Borisov, S. Starshikov, and A. Demin set to work.

"I was lucky to get a good teacher," stated S. Gershevich, for whom this pipeline was his first real test in life. "One can learn a great deal from such an expert as Anatoliy Mikhaylovich Demin. I shall try not to fall behind the other welders of our welding gang, who have made 15 welds per shift a standard performance."

The people in the administration say jokingly that the welders are proceeding at a rapid pace because V. Bartolomey's dope gang has arrived at the construction site. The fame of the Siberian dimensions of this distinguished Tambov pipeline construction worker has long since gone beyond the boundaries of the Tyumen North. This leading dope gang was presented at the Exhibit of Achievements of the National Economy of the USSR for shock-work performance on building the Urengoy-Petrovsk natural gas pipeline, and the foreman was awarded a Moskvich automobile.

"We'll soon be treading on your heels," laughed Vladimir Ivanovich in a deep bass voice, "and then your daily advance will be not a kilometer, as it is now, but with a 'little tail's' worth extra!"

"How long a 'tail' do you need?" the welders joked back.

The trust veteran immediate turned serious: "Long enough, fellows, to keep our word: to complete the head-end section in March, as we promised at an open party meeting."

Everybody in the administration is aware of the importance of this export natural gas pipeline to the nation's economy and considers ahead-of-schedule completion to be the homeland's most important task. It is not surprising that following completion of one of the most laborious stretches, job superintendent R. Yaremeychuk and fitter S. Zabolotnyy submitted, right here on the pipeline route, applications for CPSU probationary membership. Party member L. Maslik, who is working at another jobsite, asked the administration party committee to send him wherever things were currently the most difficult.

Construction of the Urengoy-Uzhgorod natural gas pipeline has truly become a construction project of all the people. The workforce of the Kuybyshevtruboprovodstroy Trust is working side by side with construction workers from Tyumen and Voronezh. Having completed and turned over for testing ahead of schedule that stretch of the Urengoy-Uzhgorod natural gas pipeline which crosses the Chuvash ASSR, the Volga pipeline construction workers resolved to complete, prior to onset of the spring thaw, their assigned volume of work on the Tyumen section of the export trunk pipeline. And since the very first days pipeline construction has been proceeding at an accelerated pace on the part of the spreads which include the ditching crews of USSR State Prize recipient A. Pridantsev and F. Tregubov, N. Polikarpov's cleaning, priming and coating gang, and three pipe and welding gangs.

The workforce of one of the spreads is headed by young Communist L. Mikhel'son, whom I met in the welding gang which had just turned over to their relief the still hot holders: not a minute of idle time!

The spread workforce was one of the first in the trust to shift over to advanced cost-accountability organization of labor, whereby earnings, as we know, are distributed on the basis of labor participation factor, according to the contribution of each individual to the overall job. With this method mutual interchangeability is indispensable, and pipeline construction workers work hard to master related jobs. For example, foreman N. Polikarpov is checked out to

operate practically all pipeline construction equipment: if necessary he can operate an excavator, bulldozer, or sideboom tractor. The workforce works not by numbers but by skill. They are confidently advancing toward impending link-up on the floodplain of the Igarka-Tobiyakha River with their socialist competition rivals from the Tambov Administration ESU-5.

The high-speed and high-quality integrated spreads are steadily accelerating their daily advance. They are being reliably assisted by modern, high-powered equipment and advanced engineer solutions. Meriting attention in particular is a design involved in building ice crossings, adopted by the Tymen innovators from the Severotruboprovodstroy Trust. With the aid of so-called two-phase thermosiphons, they have succeeded in extending by 1 month the "life" of a winter road across the Nadym River.

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PIPELINE CONSTRUCTION

CONSTRUCTION REPORT FROM KUYBYSHEV

Moscow PRAVDA in Russian 23 Feb 83 p 1

[Article by A. Leskin, party committee secretary, Kuybyshev Truboprovodstroy State Union Trust, Novokuybyshevsk, Kuybyshev Oblast: "Line Advances Swiftly: Building the Urengoy-Pomary-Uzhgorod Natural Gas Pipeline"]

[Text] The men of the Kuybyshevtruboprovodstroy Trust spread [kompleksnyy tekhnologicheskiy potok] building the Urengoy-Pomary-Uzhgorod trunk natural gas pipeline are completing 200 kilometers of pipeline per year. This outstanding performance is double the industry target.

The biography of this spread is a brief one. The trust first established it in May 1981 to work on building the Urengoy-Petrovsk natural gas pipeline. What new elements were added? Previously separate organizational subunits ditched, others lined up and welded, while others worked as dope gang and lowered in. Now a large, highly-mechanized spread is performing all operations in assembly-line fashion, from preparing the right-of-way to testing and bringing the pipeline on-stream. Initial experience has fully confirmed the effectiveness of a job focused on the end result.

The integrated spread was more extensively adopted on the Urengoy-Novopetsk pipeline route, where the line proper of a 111-kilometer stretch of trunk pipeline was built in half a year under difficult winter conditions. Incidentally, the slogan under which all the industry's line work forces are presently working was born along these pipeline routes. "Each work day is a kilometer of finished gas pipeline."

The amassed experience is today standing in good stead on a unique construction project -- the Western Siberia-Western Europe natural gas pipeline. We employed a special approach in assembling the workforce for this project.

Communists were placed in charge of almost all leading brigades. The combined mechanized grading and ditching brigade is lead by youth mentor and 1982 USSR State Prize recipient A. Pridantsev, while the excavator operator brigade is headed by trust party committee member N. Tregubov. The most difficult welds are performed by welders under the direction of young party member R. Daminov. Coating-wrapping and lowering in are performed by N. Polikarpov's brigade. L. Mikhel'son, who had proved himself on earlier pipeline jobs, was made

spreadman. And since the workforce was made up largely of youth, V. Troshchin, an experienced engineer and trust chief welder, was named assistant spreadman. They also formed the backbone of the shop party organization formed on the pipeline job.

Assessing what had already been accomplished, we decided to mobilize all discovered reserves. What new items appeared on the 127 kilometer stretch of the international natural gas pipeline crossing the territory of the Chuvash ASSR?

First of all the integrated spread acquired the status of an independent general contractor cost-accountable organization. Its structure was refined and specialization deepened at all stages of production. Secondly, the spread now works only on the line proper. Subdivisions engaged in road, transport, and engineering support operations were separated from the spread. Instruments of management became more reliable, the spread became more mobile, and organization of labor was assuming the form of integral brigade contract.

We also examined the following item: how can the job be done with fewer people? This is particularly important now, when we are commencing work in the north, at the head of the pipeline. The idea arose to join the brigade contract and the Shchokino method into a single system, and at the same time to incorporate engineer and technician personnel into the spread workforce, increasing their incentive for a good end result of their labor.

Now the entire spread workforce is working on a unified work order, on the basis of the calculated cost of a kilometer of completed pipeline. We also adopted a new form of figuring bonuses for meeting contractual obligations.

Results from the reorganization were felt immediately. The size of the workforce was reduced from 400 to 250. While the average monthly output per worker on construction of the Urengoy-Novopskov natural gas pipeline was 7750 rubles, output rose to 11,000 rubles on the Urengoy-Uzhgorod line! Average earnings for engineer-technician personnel and white-collar employees in the spread were 306 rubles, as compared with the trust average of 160 rubles. With such high earnings, each and every specialist gives full effort. And a full effort is demanded of them.

Upon commencing construction of this export pipeline, the spread workforce adopted tougher socialist pledges -- to complete line work on a 127-kilometer stretch by the 60th anniversary of establishment of the USSR. The Volga pipeline workers kept their word with honor. Now subcontractor organizations have begun testing, with the aim of turning over the completed segment of the pipeline to the client 9 months ahead of schedule.

The spread workforce (this is mobility!) has begun working on the head-end section of the transcontinental pipeline, which it also pledged to bring on-stream ahead of schedule.

The main result of this experiment is that it had become possible to build within a year's time 200 kilometers of trunk natural gas pipeline with the men and equipment of a single workforce. Precisely such an outstanding result was achieved last year. Now the spread workforce has resolved not only to lay an additional 200 kilometers of pipeline but also to maintain this pace up to the

end of the five-year plan. Such excellent possibilities for speeding up work operations are being opened up by advanced know-how along the entire route, on which 42 spreads are presently working!

But there still exist unanswered questions pertaining to this new organization of operations. For example, subcontractor engineering subdivisions should be working at an overtaking pace. Up to the present time, however, the client has failed to keep up with us. Exactly the opposite has been happening, chiefly due to delay in delivery of equipment: the spread has completed its work, but the subcontractors fail to arrive. Interrelations between the principal production component and its partners have not yet been definitively clarified. The spread has material incentive to turn out a finished product as quickly as possible, while subcontractors do not seem to have such incentive.

Recently the workforce of the Kuybyshevtruboprovodstroy Trust was awarded the challenge Red Banner of the CPSU Central Committee, USSR Council of Ministers, All-Union Central Trade Union Council and Central Committee of All-Union Komsomol based on performance results in the All-Union Socialist Competition in honor of the 60th anniversary of establishment of the USSR. The construction workers adopted tougher pledges in response to this coveted award. They are capable of keeping their word.

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PIPELINE CONSTRUCTION

CONSTRUCTION REPORT FROM THE UKRAINE

Kiev PRAVDA UKRAINY in Russian 7 Apr 83 p 1

[Article by Ya. Zhukovskiy: "Pulse of the Construction Job"]

[Text] The spring thaw, which is attended by a period of bad roads, always presents additional difficulties to pipeline construction workers. March of this year was a particularly difficult month: alternating periods of cold weather and thaws, hurricane-force winds and thundershowers, and at month's end the rapid onset of warm weather created a very difficult situation at the western end of the Urengoy-Pomary-Uzhgorod pipeline. During these days men and machines worked with expenditure of a great deal of effort across our entire republic. March brought a substantial advance toward pipeline completion: 155 kilometers of natural gas pipeline were coated, wrapped and lowered in, while even more -- 157 kilometers -- was backfilled.

Presently the bulk of the work is shifting increasingly to the right-of-way. Almost all the pipe has been delivered -- only 24 kilometers worth remains (it is to be delivered from other sections), and yard welding of two sections of pipe into doubles is also approaching completion. By 31 March 1046 kilometers -- three fourths of the entire Ukrainian part of the gas pipeline -- had been cap-bead welded. This is why concluding operations -- lowering in and backfilling -- occupy the center of attention. In the first three months of this year a greater volume of work on these operations has been performed than during the entire last year.

A number of contractor organizations working in the Ukraine and on the approaches to the Ukraine are virtually winding up the job in their assigned areas. Following the workforce of the Kiev spread, which was the first to complete the line in its assigned section, the last kilometers are being laid by the construction workers from Krasnodar. The pipeline construction workers from Rostov have only 4 more kilometers on RSFSR territory and have redeployed the bulk of their equipment to Sumy Oblast -- in this oblast they have already welded 13 kilometers of pipe along the right-of-way. Voronezh construction workers are also working in this oblast. They pledged to complete their section in the second quarter of the year, and all signs indicate that this pledge is quite realistic: more than half the pipe has been welded into the line, and exactly half has already been backfilled.

In Poltava Oblast line work has been assigned to two large contractor organizations -- the Lengazspetsstroy Trust and the recently arrived subdivision of the Shchekingazstroy Trust. In March alone the Shchikino people welded in more than 20 kilometers of pipe in their 48 kilometer section, and more than half of this distance has been lowered in and backfilled. The Leningrad construction workers are also successfully advancing.

The most difficult part of the right-of-way lies in Ivano-Frankovsk, Lvov, and Transcarpathian oblasts. as we know, this area is being handled by the Transcaucasian Pipeline Construction Administration, to which local highly-skilled workers have also been assigned. The construction-installation subdivisions of the Transcaucasion administration have welded 146 out of 183 kilometers of pipeline, and frequently adding one section at a time, since it is not always possible to employ double-jointed pipe in mountain terrain, although 140 kilometers of double-jointed pipe is in the ground. The fitters and welders from the GDR also did a good job in March: in Ivano-Frankovsk Oblast they welded 18 kilometers of pipeline during this month. Polish pipeline construction workers, who have just joined the project, have strung about 7 kilometers of pipe and laid 3 kilometers of pipeline.

The Ukrtruboprovodstroy (Kiev) and Ukrzapadneftegazstroy (Lvov) trusts were assigned a section in the central part of the republic -- Kiev, Vinnitsa, and Khmelnitskiy oblasts -- 395 kilometers. This is the largest part of the route in the Ukraine. Having completed construction in Kiev Oblast, crews moved to Vinnitsa Oblast -- the manpower of three spreads is now concentrated in that oblast. They have made a socialist pledge to complete the entire Vinnitsa section in the third quarter of the year.

The pipeline construction workers of the Lvov Trust are advancing swiftly: of the 68 kilometers assigned to them in Khmelnitskiy Oblast, 59 kilometers of pipe is in the ground. They laid 20 kilometers in March.

By the end of the first quarter of this year, on a right-of-way extending 1388 kilometers within the operating boundaries of the Ukrugazprom Association, 910 kilometers of pipeline were coated, wrapped and lowered in, plus an additional 136 kilometers welded. Figures for the entire Ukraine (the right-of-way extending 1132 kilometers according to refined figures), the corresponding figures are 671 and 819 respectively. Fifty-five percent of the pipeline in this republic has been backfilled and is virtually ready for pressure testing.

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PIPELINE CONSTRUCTION

APPRECIABLE ADVANCE IN UKRAINIAN CONSTRUCTION NOTED

Kiev PRAVDA UKRAINY in Russian 6 Mar 83 p 1

[Unattributed article: "Pulse of the Construction Job"; passages rendered in all capital letters printed in boldface in source]

[Text] February brought an appreciable advance in construction of the Ukrainian part of the Urengoy-Pomary-Uzhgorod natural gas pipeline. During this month, according to figures of the Ukrugazprom Industrial Association, 200 kilometers of trunk pipeline were lowered in, backfilled, and readied for testing, as compared with 113 kilometers completed in January. A number of contractor organizations doubled their January output. They include construction-installation subdivisions of the Ukrtruboprovodstroy Trust, the Transcaucasian Pipeline Construction Administration, and others.

This year there has been a sharp increase in the work pace of the Leningrad construction workers (Lengazspetsstroy Trust). In February they were joined by pipeline construction workers from Shchekingazstroy -- together, in just one month's time, they readied for testing 50 kilometers of completed gas pipeline. The subdivisions of Ukrzapadneftegazstroy and Voronezhtruboprovodstroy working in this republic, as well as the Krasnodar and Rostov construction workers, who are working on the right-of-way on the approaches to the Ukraine, also completed appreciably more pipeline than in January. **OF 1392 KILOMETERS OF RIGHT-OF-WAY WITHIN THE BOUNDARIES OF THE UKRAINIAN GAS SUPPLY SYSTEM, 745 KILOMETERS -- MORE THAN HALF -- HAVE BEEN COATED, WRAPPED, AND LOWERED IN.**

The work pace is steadily increasing on all operations. Two months ago, at the beginning of January, 46 percent of the pipe sections were welded into the string directly on the right-of-way, 51 percent at the beginning of February, and now, at the beginning of March, 66 percent. The pipe has been strung along almost the entire pipeline route -- very little stringing remains uncompleted. Soon there will be yard double-jointing of pipe sections at pipe yard locations. In spite of the hard and frozen soil, ditching operations are progressing intensively: **200 KILOMETERS OF DITCH WAS DUG IN FEBRUARY, A RECORD FIGURE FOR THE DITCHING CREWS.**

The gas pipeline right-of-way stretches across 10 oblasts in this republic. The right-of-way is of differing length in each oblast, and pipeline construction is in different phases. February was marked by completion of pipeline work in Kiev Oblast -- all 115 kilometers have been completed here. The only crews

remaining on the line are welding block valves and bypass valves in the line, and placing special curved pipe sections at sharp turns and at road crossings. The bulk of the men and equipment are being redeployed to neighboring Vinnitsa Oblast, where the length of right-of-way is almost twice as great, but not one but two spreads are operating there. Now Integral Spread No 1 -- winner in the republic gas pipeline construction worker competition -- is coming to their aid.

These components of the Kiev Ukrtruboprovodstroy Trust are laying a trunk pipeline extending 332 kilometers -- across Kiev, Vinnitsa, and part of Khmelnitskiy Oblast. They have the largest section in the Ukraine. And a good deal has been accomplished here: 242 kilometers of pipe has been welded, and almost 210 of these kilometers have been coated, wrapped, and lowered in.

Also leading in number of completed kilometers is Ivano-Frankovsk Oblast, where Armenian construction workers are working together with local skilled pipeline builders, as well as emissaries from the German Democratic Republic. Already 75 percent of the pipe sections have been welded into the string -- 125 kilometers -- more than 50 of which have been accomplished by the construction workers from the GDR, who are continuing to pick up their work pace.

Pipeline construction workers from the Transcaucasian Administration are also laying pipeline in the Carpathians, on a mountain pass in Transcarpathian Oblast. There also approximately 50 kilometers of pipe sections have been welded into the string, and the greater part has been lowered in and backfilled. Welders and fitters arriving from the Polish People's Republic began working in this westernmost section in February. They are working directly on the right-of-way, and the first kilometers of pipe sections have been welded in.

Sumy and Khmelnitskiy oblasts are at approximately the same status -- 40-50 kilometers of pipe has been lowered in, while the figure is somewhat greater for Cherkassy Oblast and somewhat smaller for Poltava Oblast. The Shchokino pipeline construction workers, however, who have arrived in Poltava Oblast, promise to rectify the situation in short order -- they have already welded on the line 22 kilometers of pipeline and are confidently advancing.

Although the cold days make the job more difficult, they have temporarily ended the slush and mud-choked roads which were making it very difficult both to deliver pipe and to advance along the right-of-way. The construction crews are endeavoring to make the fullest possible use of these favorable conditions.

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PIPELINE CONSTRUCTION

LEAD ARTICLE CALLS FOR SPEEDUP IN WORK

Kiev PRAVDA UKRAINY in Russian 1 Apr 83 p 1

[Unattributed lead article: "Acceleration on the Right-of-Way"]

[Text] Engaging in competition under the slogan "Each and Every Kilometer of Pipeline Ahead of Schedule!", the workforce of Spread No 1, headed by Engineer V. Radchenko, from the Ukrtruboprovodstroy Trust, has successfully completed laying pipe on a 115 kilometer stretch of the Urengoy-Uzhgorod pipeline extending across Kiev Oblast, and has redeployed to neighboring Vinnitsa Oblast, to speed up work on a more difficult section.

Speedup. This term, capacious of meaning, defines the rhythm of construction of each kilometer along the gigantic pipeline. A total of 3615 kilometers of pipe has already been welded into the string, and almost 3000 kilometers have been coated, wrapped, and lowered in. Thus slightly more than 800 kilometers of pipe remains to be welded along the entire trunk pipeline.

The Urengoy-Pomary-Uzhgorod natural gas pipeline runs 1146 kilometers across 10 oblasts of the Ukraine. This represents one third of its total length. More than 250 construction, installation, specialized and transport organizations, industrial enterprises and design institutes are actively involved in labor rivalry according to the "work relay" principle, to achieve faster completion of gas pipeline facilities. The pipeline has been extended by 38 kilometers in the last week alone.

Presently the pipeline construction crews are averaging 20 kilometers a day along the entire right-of-way, from Urengoy to Uzhgorod. Such a high performance figure has been achieved due to precision work organization, strengthening of production and labor discipline and enthusiasm on the part of competing personnel. The method of organizing the job in integrated spreads [kompleksnymi tekhnologicheskimi potokami] has proven fully effective. In the past certain components would ditch, others would weld and fit, and still others would coat, wrap and lower in; now a large, highly mechanized complex performs all operations in a continuous sequence -- from clearing the right-of-way to testing and bringing the pipeline into service. The acquired experience has fully confirmed the efficiency of work focused on the end result. Working particularly precisely and smoothly in the Ukraine are the spreads headed by V. Radchenko from the Ukrtruboprovodstroy Trust, by S. Gevorkyan from the Transcaucasian Pipeline Construction Administration, as well as by other experienced specialists in building trunk gas pipelines.

Considerable organizational work, aimed in the final analysis at boosting the pace and improving the quality of gas pipeline construction, is being done by party city and rayon committees, local soviet and trade union agencies, temporary party organizations, party and Komsomol groups. Oblast headquarters are operating under the auspices of oblast committees of the Ukrainian Communist Party to coordinate the efforts of the construction crews and subcontractors and organize socialist competition and leisure time activities for pipeline construction workers. All matters connected with building the gas pipeline are being resolved in a practical and purposeful manner by headquarters set up under the auspices of the Transcarpathian, Ivano-Frankovsk, Khmelnitskiy, and Cherkassy Oblast party committees. They devote particular attention to mass-political work directly on the line and to enhancing the vanguard role of party members.

A decisive phase in construction of the natural gas pipeline has now begun. While not diminishing the pace of competition on the line proper, we must turn, as they say, toward such most important facilities as compressor stations. By year's end 17 compressor stations should be on-line along the pipeline, including two in the Ukrainian section -- the Barskaya and the Grebenkovskaya. And the latter is pledged for completion one month ahead of schedule. At the present time we cannot state that everything is going well on the completion-scheduled facilities. Crews are failing to meet weekly and daily schedules. And it is not only the construction workers who are at fault here. Frequently the suppliers -- machine building enterprises -- are at fault. Recently Minpromstroy [Ministry of Industrial Construction] has undertaken a number of efforts to correct the situation, but "bottlenecks" and difficulties remain.

It would be wrong, however, to concentrate all our attention only on these two completion-scheduled stations. The fact is that at the beginning of next year the entire export pipeline will be moving gas. And this means that all other compressor stations (there are seven of these in the Ukraine) must be brought on-line in the first quarter of the year. How is work proceeding at the construction sites? How is delivery of station equipment proceeding? How is its installation advancing? How are the manufacturers doing in filling the orders of the pipeline construction people? These and many other questions should be scrutinized by party and soviet agencies and by construction coordination headquarters.

An important role here is assigned to the mass media. At an all-union meeting recently held in Uzhgorod, for journalists writing about the Urengoy-Pomary-Uzhgorod natural gas export pipeline, the need to place construction of compressor stations under public scrutiny was emphasized. Newspapers, radio, and television, together with activist worker correspondents, volunteer inspectors, and Komsomol "spotlighters," should widely publicize the course of socialist competition according to the "work relay" principle, and should pay inspection visits to supplier plants and transport organizations. It is essential to ensure that the "green light" is given everywhere to orders for the transcontinental pipeline.

There is one more important thing. Top officials at the pertinent ministries and agencies, party and soviet agencies should immediately, without delay,

concern themselves with determining who is to be employed operating compressor stations and other site installations and proceed to arrange for training the future gas pipeline operating personnel. The facts indicate that there are many errors of omission in this area, and some are counting on plenty of time still being available. But one can miscalculate when thinking this way.

Many unresolved problems pertaining to social and cultural services are already now demanding attention. While construction of the pipeline proper is moving ahead of schedule, and certain other industrial installations are being erected in a prompt and timely manner, construction of housing, stores, personal services shops, clubhouses, and movie theaters is proceeding at a slow pace. In the near future this may lead to undesirable complications and have a negative effect in particular on recruiting a permanent workforce of operating personnel. It is very likely that the Ministry of Construction of Petroleum and Gas Industry Enterprises cannot handle this problem alone. This means that local authorities should show greater initiative and efficiency, involving their own construction organizations in the common cause.

There are difficulties, but there are considerable successes as well. There is no doubt whatsoever that the trunk natural gas pipeline will be completed ahead of schedule. As was emphasized at a recent meeting of republic party organization activists, this constitutes the immediate task pertaining to this republic's participation in the extensive program for exploiting natural resources in the eastern part of this country. Very soon this most important fuel artery will be furnishing productive energy.

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PIPELINE CONSTRUCTION

BRIEFS

MARY GAS PIPELINE CONSTRUCTION--The last double has been welded into the string on the second section of the Mayskoye-Ashkhabad-Bezmein natural gas pipeline. This completes the 26 kilometer run from the gas field to Tedzhen. Now the construction crews of the Shatlykgazstroy and Sredazneftegazmontazh trusts will extend the line to Ashkhabad. These days work is in full swing on laying pipe along the stretch Tedzhen-Ashkhabad-Bezmein. Pipe has been welded into the string along practically the entire right-of-way. More than half has been coated and wrapped. When the new natural gas pipeline comes into service in 1984, there will be a significant improvement in supplying Ashkhabad and Bezmein with natural gas. [By V. Ivanov] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 2 Feb 83 p 2] 3024

WEIGHTING GAS PIPELINE--Bryansk--The workforce at the Bryansk Diesel Equipment Overhaul Plant has completed a prestigious order for the construction crews building the Urengoy-Pomary-Uzhgorod trunk natural gas pipeline. They have built and shipped out to the right-of-way a batch of so-called belts, which are to be hung on the pipe. These consist of one and a half meter long metal plates, on the ends of which special disks are attached. Placed over a pipe section, they secure concrete weights which anchor the pipe string in place, preventing it from rising to the surface. This is primarily necessary when the right-of-way runs through swampy and flooded areas. The enterprise has also begun filling other orders for the pipeline construction people. [By IZVESTIYA correspondent R. Bikmukhametov] [Text] [Moscow IZVESTIYA in Russian 12 Mar 83 p 3] 3024

PIPELINE HEAD END COMPLETED--Nadym, Tyumen Oblast--Installation has been completed on the head-end section of the Urengoy-Pomary-Uzhgorod pipeline by the crew of B. Diduk. This pipeline section, stretching 38 kilometers, was completed two weeks ahead of schedule. Time was saved by employing an advanced welding method. [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 17 Feb 83 p 1] 3024

URENGOY-UZHGOROD PIPELINE--Construction workers on the Mordovian section of the Urengoy-Pomary-Uzhgorod natural gas export pipeline became the leaders in socialist competition during the pre-Mayday labor watch in the Lengazspetsstroy Trust. The brigade led by V. F. Vasil'yev completed ahead of schedule all pipeline work on an 85 kilometer stretch and has begun readying the pipeline for testing. "Tomorrow powerful pumps will begin pumping water into the line," explained trust chief dispatcher R. S. Levitov. "Pressure in the pipe will be

boosted to 90 atmospheres -- considerably greater than the pipeline's rated operating pressure. Leningrad construction crews are presently completing preparation of equipment and valves for pressure testing and running air through the line in two other Leningrad sections as well -- in Poltava and Cherkassy Oblast. [By O. Kryuchkov] [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 29 Apr 83 p 3] 3024

URENGOY-CENTER PIPELINE--Kazan (TASS)--Construction crews in the Tatar ASSR have begun preparations for construction of the Urengoy-Center trunk natural gas pipeline. Double joints are being welded for the pipeline at mechanized pipe yards. Every day they turn out 2 kilometers of doubles, which is considerably above the standard figure. [Text] [Moscow IZVESTIYA in Russian 23 Apr 83 p 3] 3024

GAS PIPELINE BRIDGE--Lvov (TASS) -- The construction crews working on the Carpathian section of the Urengoy-Pomary-Uzhgorod natural gas pipeline have crossed one of the most difficult water obstacles. The brigade of R. Yemanidi of the Transcaucasian Pipeline Construction Administration has completed erection of a bridge across the Lomnitsa River. It is more than a kilometer in length. This capricious mountain stream is not very wide, but it changes its channel almost every year and frequently spills over its banks. The construction people took care to protect the pipeline from such surprises. Solidly-built reinforced concrete supports raise to a height of 11 meters above the water surface the bridge which carries the pipeline across. The workforce has already accomplished a great many difficult crossings. They quickly ran the pipeline under the busy Ivano-Frankovsk-Yaremcha highway and have made several crossings of the buried Soyuz natural gas pipeline and the Bystritsa Solotvinskaya River. Ahead lie new obstacles to be assaulted. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Feb 83 p 1] 3024

PIPELINE COMPRESSOR STATION--Perm Oblast--The Urengoy-Pomary-Uzhgorod transcontinental natural gas pipeline does not consist merely of thousands of kilometers of pipe stretching from Western Siberia to our country's western border. It also involves many kilometers of a highly complex interweave of pipes at compressor stations, which are being erected along the line at a shock-work pace. The workforce of the Chaykovskiy Administration of the Uralkhimmontazh Trust has the job of installing all process equipment at the Chaykovskiy compressor station in the Perm section of the natural gas pipeline. Time is of the essence for the installation crews, for the manufacturer will not be able to deliver the compressor units until August, and yet they must not only install and adjust the equipment but also pressure-test it prior to the onset of freezing weather in the Urals. This is why preparatory work is becoming so important. The shops at the administration's production facility are presently completing fabrication of large pipe assemblies, which will make it possible to reduce to a minimum welding operations at the construction site and will produce considerable time savings. Simultaneously preparations for installing gas processing equipment are proceeding at full swing. [By Yu. Golubev] [Text] [Moscow IZVESTIYA in Russian 15 Apr 83 p 1] 3024

SEVERTRUBOPROVOSTROY TRUST--Wanted: for construction of the Urengoy-Pomary-Uzhgorod natural gas pipeline -- drivers certified to operate the MAZ-7310 truck, drivers possessing open categories D and Ye, automotive electricians, gas and arc welders, truck mechanics. Wages piece-rate plus bonus. Regional factor of

1.7 added. Every 6 months -- northern wage premium in an amount of 10 to 60 percent, up to 80 percent after a year. Housing -- ATK [Motor Transport Column] dormitory. Applicants must submit application form, copy of employment record, copy of operator's license, medical certificate declaring applicant fit for employment in the Arctic. Send documentation to: 626711, Tyumen Oblast, Nadym, Severtruboprovod Trust ATK, personnel, phone 4-58 (through STPS Trust). Applicants report to place of employment only when officially directed to do so. [Text] [Moscow STROITEL' NAYA GAZETA in Russian 27 Mar 85 p 4] 3024

PIPELINE RIVER CROSSING--An inverted siphon 270 meters long was placed yesterday across the bottom of the Seym River -- the principal water obstacle on the Kursk section of the Urengoy-Pomary-Uzhgorod natural gas pipeline. An early spring and unexpected high waters made things difficult for the construction crews. As soon as the spring floods began receding, it was necessary once again to remove silt from the trench dug in the riverbed, to inspect the pipe wrapping, and to check the cast-iron weights for secure attachment. In spite of the delay caused by the rising waters, the river crossing was completed 1 month ahead of schedule. Other obstacles along the right-of-way have also been left behind. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 9 Apr 83 p 1] 3024

PIPELINE POWER INSULATORS--(LenTASS)--The workforce of the Elektrokeramika Association shipped off ahead of schedule a consignment of goods to the Urengoy-Uzhgorod natural gas pipeline. The high-voltage insulators manufactured by the Leningrad workers will protect against direct lightning strikes the power transmission line which will be supplying power to the gas pipeline. Recently the firm has accelerated delivery of orders to the Rostov and Zaporozhye nuclear power stations as well as to a number of other electric power plants. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 10 Mar 83 p 1] 3024

POLTAVA RURAL GAS SUPPLY--Workers and specialists of the Poltavagaz Production Association have laid pipelines and installed a gas distribution station in Lokhvitsa. Gas is already being fed to the boiler rooms of the sociocultural center, school, and kindergarten in the village of Pogarshchina, headquarters of the Znamya Kommunizma Kolkhoz. Workers have begun running gas lines to dwellings. The Znamya Kommunizma Kolkhoz is the fourth one in Lokhvitskiy Rayon of Poltava Oblast to be placed on state gas supply. [By M. Stoykevich] [Text] [Moscow STROITEL' NAYA GAZETA in Russian 16 Feb 83 p 3] 3024

CHERKASSY OBLAST PIPELINE CONSTRUCTION--Construction is continuing in full swing on the Urengoy-Pomary-Uzhgorod natural gas pipeline. The workforce of the integrated spread of Lengazspetsstroy's SMU-1 [Construction Administration-1], which is building the pipeline across Cherkassy Oblast, has made a socialist pledge to complete the pipeline proper 3 months ahead of schedule. The construction workers are successfully meeting their pledges. In the difficult conditions of swampy terrain and the floodplain of the Zolotonoshka River, 38 kilometers of pipe have been coated, wrapped, and lowered in. [Text] [Kiev PRAVDA UKRAINY in Russian 17 Feb 83 p 1] 3024

INVERTED SIPHON ON OB--Sergino, Tyumen Oblast--The workforce of Diving Services Administration No 10, which is burying an inverted siphon across the bed of the Ob River on the Urengoy-Pomary-Uzhgorod natural gas pipeline, has achieved an

excellent labor result. Yesterday the first third of the largest river crossing on this trunk pipeline was reached, 24 hours ahead of schedule. "We are ahead of schedule because of increasing the length of the inverted siphon sections," stated administration chief engineer Kh. Maksutov. "Normally they would run about 250 meters. On this crossing the length of each of the six prepared sections is almost twice that. This has substantially reduced a number of auxiliary operations, especially for the welders. As a result we have advanced more than 800 meters in 3 days time." This leading workforce has also resolved to complete the remainder of the crossing at a rapid pace. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 18 Feb 83 p 1] 3024

NIKOLSKOYE-VORONEZH PIPELINE--A 202 kilometer section of the Nikolskoye-Voronezh pipeline has been completed ahead of schedule. This pipeline will be used to ship gasoline and diesel fuel from the Kuybyshev and Ufa oil refineries. The job was being handled by the general contractor -- the workforce of the Voronezh-truboprovodstroy Trust. The brigades headed by Nichukovskiy and Lyamin and the crew of excavator operators led by Susin performed shock-work labor. The Shchekinogazstroy and Neftegazstroy trusts of the State Committee for Supply of Petroleum Products took part in building the pipeline. Bringing this trunk pipeline into service will make it possible to free up a substantial transport capacity which has been used to haul refined products to industrial and agricultural enterprises in Voronezh Oblast. By year's end construction crews are to complete work on the essential operating facilities at an intermediate booster station. [By Ye. Semenova] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 20 Apr 83 p 1] 3024

PAVLODAR-CHIMKENT OIL PIPELINE--Chimkent, 7 March (KazTAG)--Crude oil has reached the oil movement recording point on the 1642 kilometer Pavlodar-Chimkent trunk pipeline. The new pipeline will accelerate development of the gigantic petrochemical plant complex built by decision of the 26th CPSU Congress. The Chimkent Oil Refinery and the Chimkentshina Association, which are under construction here, when receiving a flow of Tyumen crude will be able fully to meet the requirements of the motor vehicles and agricultural equipment of Kazakhstan and the Central Asian republics in fuel and tires, which in the past have been hauled in thousands of kilometers from the RSFSR. Until construction is completed on these enterprises, part of the Siberian crude will be hauled by tank car to Fergana. [Excerpt] [Alma-Ata KAZAKHSTANSKAYA PRAVDA 8 Mar 83] 3024

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RELATED EQUIPMENT

GAS PUMPING UNITS WITH MARINE DRIVE

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 4, Apr 83 pp 2-3

/Article by A. I. Yakovlev, deputy chief of the technical administration of the USSR Ministry of the Gas Industry; N. A. Ishutin, director of VNIPITransgaz /All-Union Scientific-Research and Designing Institute for the Transporting of Natural Gas/; V. I. Tverdokhlebov, general director of VNPO Soyuzturbogaz /All-Union Scientific Production Association of Turbine Gas Generators/; and B.M. Volkov, department chairman of VNPO Soyuzturbogaz: "New Equipment for Transporting Natural Gas: From Development to Adoption: Gas Pumping Units with Marine Drive" /

/Text/ In 1982 a new modification of the GPU-10-01 underwent interdepartmental testing. In place of the 370-18-4 supercharger a full thrust two-stage supercharger, the 235-21-1, which was manufactured by the Production Association Nevskiy Zavod imeni V.I. Lenin, was used.

The motor for the gas pumping unit was executed in a three-shaft layout. A two-stage axial-flow compressor, consisting of low and high pressure compressors driven by the appropriate turbines, provides an air compression of up to 10.3. The nominal temperature of the gas in front of the turbine is 785 degrees C. The GPU-10-01 gas pumping unit is fully automated, set at the zero mark, and delivered in individual units.

The basic characteristics of the GPU-10-01 meet the requirements stipulated for the best foreign and domestic gas pumping units.

VNIPITransgaz has proposed optimal solutions for selecting the number of gas pumping units at a compressor station[KS]. At distances of 120 to 140 kilometers between compressor stations, it's necessary to install five operating units; at distances of up to 100 kilometers between the compressor stations the gas dynamic characteristics of the full thrust superchargers of the 235 type are well adapted to the characteristics of gas pipelines when six GPU-10-01 units are installed at the compressor station.

The use of the GPU-10-01 in place of the GTN-10 provides a reduction in the amount of construction and installation work when building compressor stations having eight units (six operating and two reserve units) by 1.7-fold. Labor intensiveness at the construction site is cut in half.

The institute has developed standard design solutions for a standardized compressor station using the GPU-10-01; and along with the VNPO Soyuzturbogaz organization it has come up with a design for a compressor station using GPU-10-01 units in preassembled form from the USSR Ministry of the Gas Industry. The delivery of all equipment and pipelines for the compressor station in fully plant-prepared units significantly reduces the amount of construction and installation work, cuts down on labor intensiveness at the construction site of the compressor station, and speeds up the completion and start-up with a guaranteed high quality of execution of all units, assemblies and installations, while meeting all present day requirements for the industrialization of construction.

The layout of the standardized general plan of the compressor station using GPU-10-01 units calls for the conventional division of the site of the compressor station when determining the placement of the buildings and structures in the production and maintenance and production zones. In the production area one finds the buildings, structures and installations that are directly connected with the process of compressing the natural gas; in the maintenance and production zone you find the auxiliary buildings and structures.

The basic production and auxilariy services of the compressor station are interlinked in the buildings of the production-power unit (PEB) and the maintenance-operating and repair unit (SERB).

The remaining installations and structures, which do not require the constant presence of maintenance personnel, are received in boxed units and must be delivered to the construction site in fully assembled form.

To protect the centrifugal supercharger from axial shift, VNIPITransgaz has developed a new unloading support design for the pipeline binding of the superchargers. The support, used for the first time ever for the GPU-10 units, takes on the stress from the binding pipelines. It is placed in the immediate proximity of the supercharger, which has made it possible to combine the foundation beneath the unit and provide a corresponding reduction in the use of concrete, the volume of construction and installation work, and labor expenditures.

The foundations beneath the assembly can be prefabricated-monolithic, pilings or monolithic (depending upon the type of soils). The fire extinguishing system provides for a centralized feed of carbon dioxide beneath the engine housing and a reusable foam directly into the engine housing.

To install the engine in the building and to dismantle the gas generator special rails are laid and support structures with rollers (for rolling it in and out) are fastened to both the engine and the gas generator. Auxiliary units for cleaning the gas and oil, which were developed by VNIPITransgaz and the VNPO Soyuzturbozag, are being manufactured and delivered in sets from the GPA.

A centralized structure for monitoring and managing from a unified dispatch point of the compressor station (the DP of the KS), which is situated in the PEB building, is required to operate the compressor station.

The automation of the compressor station is accomplished by a series of standardized technical systems which make it possible for the ASUTP KS [Automated System for Controlling the Technological Processes of the Compressor Station] to function. Provisions have been made for compressor shop automation systems, for [automated] control of all of the station's cranes, the automated regulation and monitoring of the gas pumping units, the automated regulation of the compressor station's antisurge equipment, the monitoring of the gas content, dispatch communications, and an automated fire protection and alarm system.

The active participation of the developers and manufacturers in the process of starting, adjusting and operating the GPU-10 makes it possible to increase the reliability of the assembly and to improve the characteristics of its individual assemblies.

Measures to improve the assemblies are spelled out in a comprehensive program for raising the reliability of the compressor station's work with the GPU-10; this program is being developed by a Coordinating Interdepartmental Council (KMS) on gas pumping units using a marine drive.

The basic structural and component future developments on the GPU-10-01, which are being executed by VNIPITransgaz, VNPO Soyuzturbozag and other related organizations, are aimed at:

- decreasing the dimensions of the building for the assembly;
- providing a degree of autonomy for the electric power supply for the assembly;

-the rearrangement of the engine's oil system unit to ensure free access to the gas generator without having to disassemble the auxiliary equipment;

-replacement of the built-in anti-freeze cooled radiator with an air-cooled system (of the type being supplied for the GTK-10-4 assemblies);

-reduction in the loads from the GPU-10 upon the span of the building;

-creation of a small GPU-10 unit based upon the new developments of the GPA-Ts-16.

At present the accessory suppliers have proposed a GPU-10 design in which a reduction gear and 250 kW generator are installed on the engine shaft. Such a solution will make it possible to significantly simplify the layout and structural solutions of the engine and to eliminate the ejection device on the exhaust path of the GTU /gas turbine unit/ and to replace the anti-freeze cooled radiator with an air-cooled unit. The removal of the radiator from the inlet path raises the GTU capacity by four to six percent.

The new modification of the GPU-10-01, the GPU-10-11, calls for additional improvements in the layout, increasing the extent of unitization and the convenience of servicing, operating and repairing.

An essentially new task that has been given to VNPO Soyuzturbogaz is to organize the delivery to the construction sites of the technological portion of the complete-unit compressor station (KBKS) in the form of fully plant-manufactured units. Soyuzturbogaz has been named the general supplier of KBKS for the GPU-10-01 installations. With VNIPITransgaz they have prepared a list of the appropriate units for the technological portion of the KBKS with the GPU-10-01.

Based upon assignments from VNIPITransgaz, Soyuzturbogaz has come up with a design documentation of KBKS units and assemblies and passed it along to the manufacturing plants so that they can ready the production line and produce experimental models. Delivery to the compressor stations now under construction of units and assemblies that have been fully prepared at the plant will make it possible to significantly reduce the amount of construction and installation work and speed up the completion of the compressor stations. The economic savings derived from the complete-set delivery of equipment is almost 200,000 rubles per compressor station.

A crucial task for the designers of the gas pumping units with marine drive is to develop and initiate the series production of GPU-16 units (based on the existing marine engine) that have an increased per-unit capacity. The anticipated efficiency of this unit must be raised to 30-31 percent.

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